REMARKS

Claims 1-25 are pending. Claims 2, 4, 6, 12, 14, and 15 have been amended. Claims 1, 3, 5, 8-11, and 16-25 have been canceled. No new claims have been added. Claims 2, 4, 6, 7, 12, 13, and 14 will be pending, therefore, upon entry of the above amendments.

Claims 1, 4, 10, 12, and 15 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U. S. Patent No. 5,922,617 ("the Wang patent"). Claims 1, 3, 4, 8, 10, and 11 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U. S. Patent No. 7,141,416 ("the Krutzik patent"). Claims 1-11, 15-21, and 25 have been rejected under 35 U.S.C. § 103(a) as being obvious over The Krutzik patent in view of U. S. Patent No. 6,545,758 ("the Sandstrom patent"). Claims 12-15 have been rejected under 35 U.S.C. § 103(a) as being obvious over The Krutzik patent in view of the Sandstrom patent, and further in view of the Wang patent. Claims 1, 3, 5, 8-11, and 16-25 have been canceled, thereby rendering these rejections moot with respect to those claims.

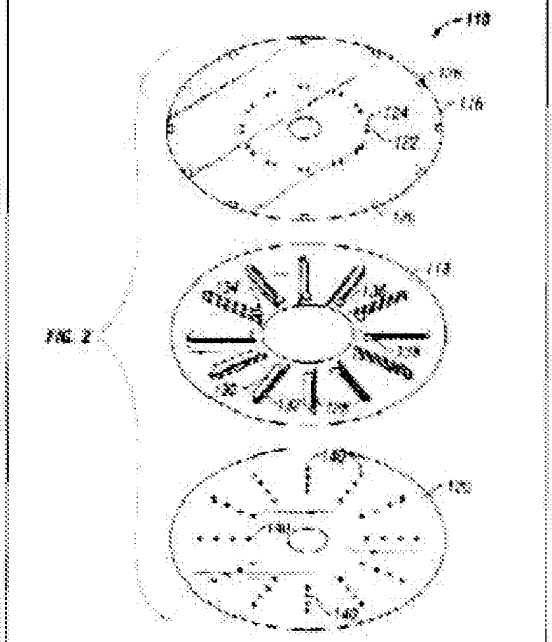
Claim 2 of the present application has been amended to recite, in part: "a biochip readout device including: biochip cartridge comprising: an optical disc in which at least one or more depressed portions are formed, wherein a bio-chip formed by spotting bio-cells is installed in each depressed portion, and the biochip includes a fixing member thereunder such that the biochip cannot be separated from the optical disc when an optical disc is rotated or moved or the biochip is combined with another substrate thereon, wherein the optical disc is coated with a selective wavelength reflection film on the lower surface of the optical disc."

Applicant respectfully submits the none of the prior art references to record teach or suggest these limitations.

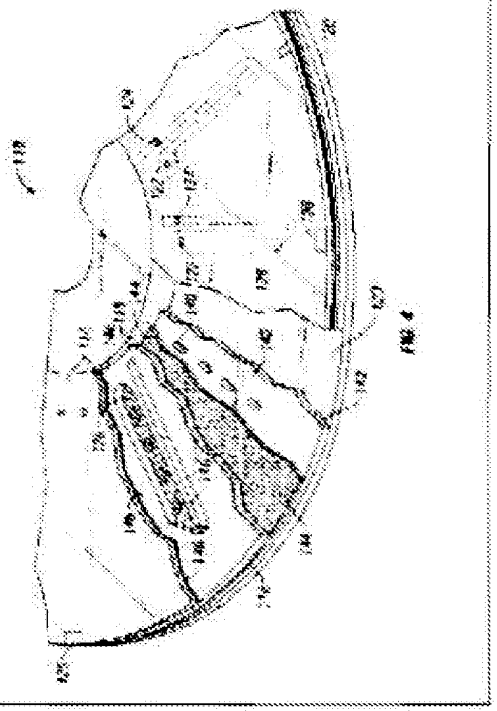
The Krutzik Patent

Figures 2 and 4 of the Krutzik Patent are reproduced below. In contrast to the optical disc recited in amended claim 2 of the present application, the optical bio-disc 110 of the Krutzik patent doe not have at least one or more depressed portions formed therein, wherein a bio-chip formed by spotting bio-cells is installed in each depressed portion.

Fig. 2 of the cited invention 1 (an exploded perspective view of the optical bio-disc)



A sectional view showing the subject matter of a combination structure



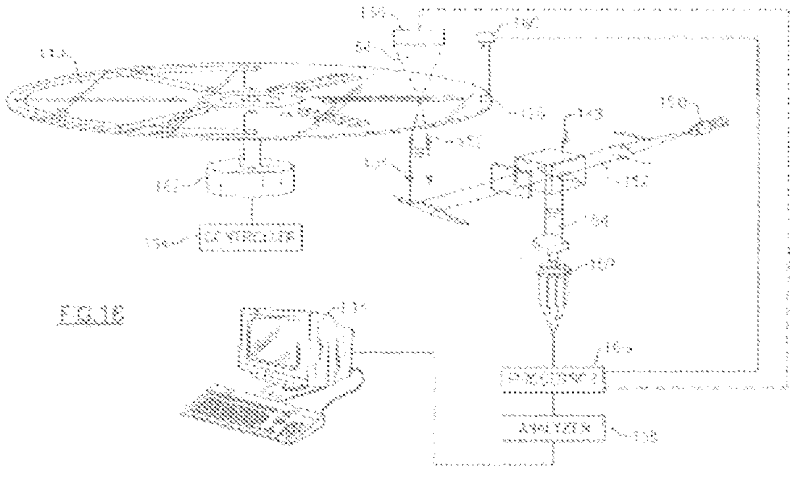
As illustrated in the drawings above, the optical bio-disc 110 of the Krutzik patent is basically configured such that three layers are combined. That is, the bio-disc 110 is

configured such that the three layers such as a cap portion 116, a channel layer 118, and a substrate 120 are combined, and the cap portion 116 is pierced by the trigger marking 126, the inlet port 122, and the vent port 124.

Fluidic circuits 128 are formed on the surface of the channel layer 118 using a stamping or etching method. Each fluidic circuit 128 has a flow channel 130 and a return channel 132. Moreover, the fluidic circuit 128 has a mixing chamber formed of two kinds of chambers, a symmetric chamber 136 and an off-set mixchamber 138. Target zones 140 are included on the substrate 120.

In the optical bio-disc 110 of the Krutzik patent, the three layers as described above are combined, forming a detection material on the fluidic circuit. Further, the object of the cited Krutzik patent is to establish a system for forming the detection material on the fluidic circuit and for optically detecting the materials which are mixed by a rotation through the flow channel.

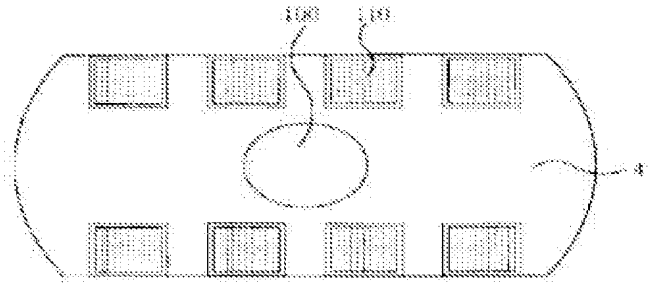
Figure 16 of the Krutzik patent is reproduced below.



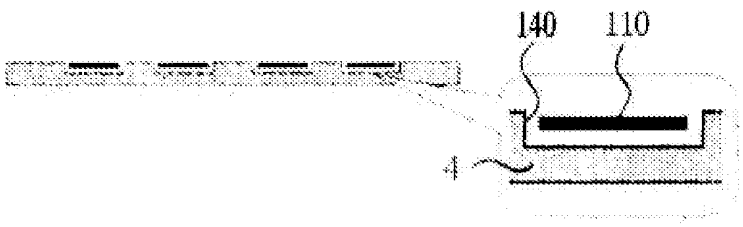
As seen from the above illustration, the detection system of the Krutzik patent forms the fluidic circuit to laminate bio materials on three layers and is a system to optically detect them.

Accordingly, the detection system of the Krutzik patent is quite different from the structure of the optical disk of the biochip cartridge of claim 2 of the present application, which has grooves or depressed portions to separately receive the biochips. The present invention has superiority beyond the detection system of the Krutzik patent in view of the fact that the present invention is advantageous in that the existing commercialized bio-chips can be used for general purposes.

Fig. 9 of the present application is reproduced below.



[Fig. 10]



The biochip cartridge of claim 2 of the present application does not form bio cells by etching the optical disc itself, in contrast to the detection system of the Krutzik patent. Rather, the biochip cartridge of claim 2 includes an optical disc including the grooves or depressed portions 140 for insertably receiving the separate bio chip 110, and a fixing member (not drawn) so that the biochips 110 are not separated from the optical disc when the optical disc is rotated at a high speed.

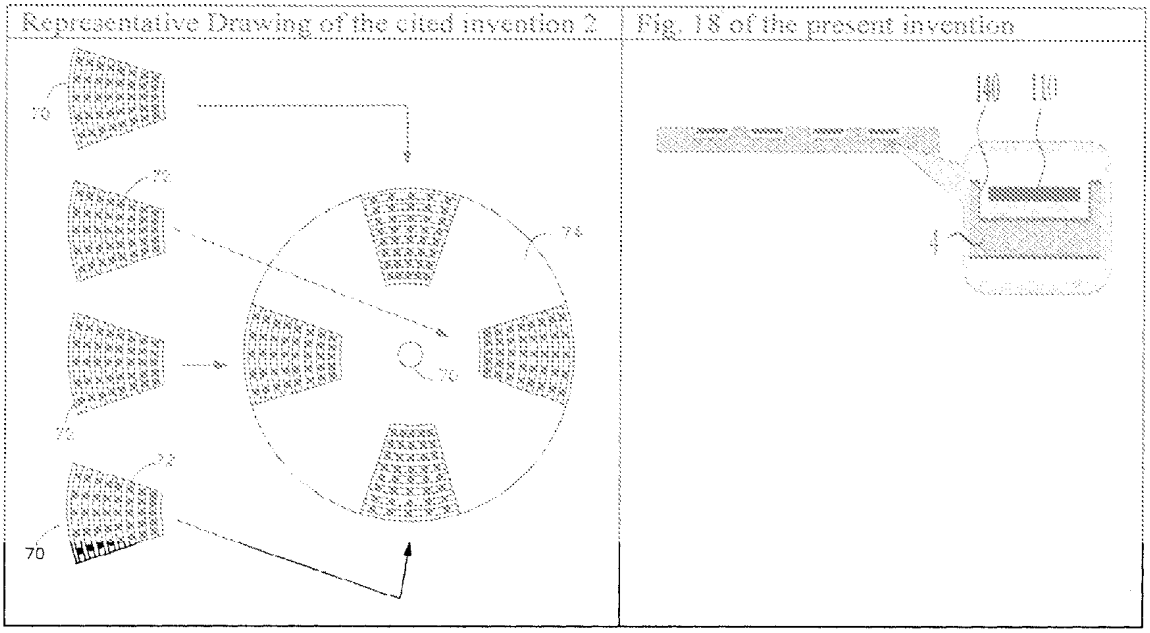
This is clearly different from the optical bio-disc 110 of the Krutzik patent in which three layers are formed, the fluidic channel for receiving each bio material is formed, and thereafter they are combined with each other. Thus, the optical bio-disc 110 of the Krutzik patent itself performs the function of the bio chip.

Accordingly, Applicants respectfully submit that the system recited in amended claim 2 of the present application is patentably distinct from the detection system of the Krutzik patent.

The Wang Patent

The system recited in amended claim 2 of the present application is patentably distinct from the system of the Wang patent with respect to the structure used to form the bio cells. The Wang patent discloses an optical disk 74 having array segments 70 placed thereon for holding particles to be detected.

Figure 5 of the Wang patent is reproduced below on the left, and Figure 18 of the present application is reproduced on the right.



The optical disc 74 of the Wang patent is configured so that it performs the function of the bio chip. That is, particles are inserted into a plurality of pits 72 on the segments 70, and they are detected by the rotation driving of the disc.

The optical disk of the Wang patent is different from the biochip cartridge of claim 2 of the present application with respect to the structure thereof in view of the fact that the biochip cartridge of claim 2 includes an optical disc comprising the grooves or depressed portions 140 for insertably receiving the separate bio chips 110 and fixing members (not drawn) so that the bio chips 110 are not separated from the optical disc when the optical disc is rotated at a high speed.

The optical disk 74 of the Wang patent, which includes array segments 70 having pits 72 that receive particles to be detected, is quite different from the optical disk of the biochip cartridge of claim 2 of the present application which, as discussed above, has grooves or

depressed portions 140 for receiving the separate bio chips. The system of claim 2 of the present application, therefore, has superiority beyond the optical disk 74 of the Wang patent because the optical disk recite in claim 2 of the present application has the advantage of being able to accommodate existing commercialized bio-chips used for general purposes.

The Sanstrom Patent

The Sandstrom patent relates to a simple detection system, and does not suggest the structure of the optical disc like the present invention.

US Patent Application Publication No. 2005/0048595 ("the Yamatsu application")

The Yamatsu application, like the Krutzik patent, discloses an optical disc 101 that performs the function of the bio chip. Accordingly, the Yamatsu application is clearly different from the system of claim 2 of the present application.

Applicant respectfully submits that claim 2 of the present application is patentably distinct from the prior-art references of record in view of the above amendments and remarks Accordingly, withdrawal of the rejection of claim 2 (and claims 4, 6, 7, 12, 13, and 14, which depend therefrom) under 35 U.S.C. 102(b), 102(e), and/or 103(a) is respectfully requested.

Applicants respectfully submit that the present application is in condition for allowance in view of the above amendments and remarks. A notice of allowability, therefore, is respectfully requested.

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